REMARKS

Summary of Office Action

The Applicants thank the Examiner for withdrawing the prior rejections under 35 U.S.C. § 101, 35 U.S.C. § 112, first paragraph, and 35 U.S.C. § 112, second paragraph.

In the Office Action, the Examiner has objected to claims 10 and 13 because of several informalities.

Further, the Examiner has rejected claims 9-14 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement. The Examiner has also rejected claims 9-13 under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Finally, the Examiner has rejected claims 9-14 under 35 U.S.C. § 103 as allegedly obvious in view of "Mechanical Engineers' Handbook," second edition, edited by Myer Kutz (hereinafter "Kutz").

Summary of Response

The informalities noted in claims 10 and 13 have been remedied as per the Examiner's suggestions. The Applicants have further amended claims 9-13 in order to comply with 35 U.S.C. § 112, second paragraph. As detailed more fully below, Applicants traverse the rejections under 35 U.S.C. § 112, first paragraph and 35 U.S.C. § 103.

Rejection under 35 U.S.C. 112, First Paragraph

The Examiner has rejected claims 9-14 under § 112, first paragraph, as allegedly failing to comply with the written description requirement. The Applicants have amended claims 9 and 12 to more accurately reflect the invention and submits that amended claims 9 and 12 are now in accordance with the specification and the figures.

Per the Examiner's request, the Applicants have provided exemplary citations supporting each element of claims 9-14 below:

9. (currently amended) A method of selecting devices for an air blow system using a programmed computer said method comprising:	
a step in which an operator inputs current values of a nozzle diameter, a work distance, and a pressure immediately upstream above a nozzle or a blow impact pressure as current values through a current value inputting means;	p. 9, lns. 7-11.
a step in which the computer calculates a flow-rate of a compressed air in consumption, and at least one of a blow impact pressure or a pressure immediately upstream above a nozzle from the current values,	calculates blow impact pressure: p. 9, ln. 25-p.10, ln. 1; S3-3; p. 10, lns. 20-25; S3-9. calculates pressure immediately upstream above nozzle: p. 10, lns. 1-4; S3-4; p. 10, lns. 16-20; S3-8; p. 10, ln. 25. calculates flow-rate of a compressed air in consumption: p. 10, lns. 5-8; S3-5; p. 10, ln. 25-p. 11, ln. 15; S3-10.
a step in which an operator inputs an improved value of a nozzle diameter or a pressure immediately upstream above a nozzle so as to decrease the flow-rate of a compressed air in consumption through improved value inputting means;	p. 11, ln. 16-p.12, ln. 6; S5. inputs improved value of a nozzle diameter: p. 11, lns. 19-20. inputs improved value of pressure immediately

	upstream above a nozzle: p. 11, lns. 20-21.
a step in which the computer calculates values of a flow-rate of a compressed air in consumption~~,~~ and either a pressure immediately upstream above a nozzle or a nozzle diameter from the current values and the improved value ~~necessary~~ one or more times; and	p. 12, lns. 4-24; S6; Fig. 3. calculates flow-rate of a compressed air in consumption: p. 12, lns. 21-23; S6-4. calculates pressure immediately upstream above nozzle: p. 12, lns. 11-14; S6-3. calculates nozzle diameter from current values: p. 12, lns. 16-20; S6-2.
a step in which the result of the calculation by the computer is displayed on a screen of a personal computer for an operator to select, from the calculation result, the value of a nozzle diameter or a pressure immediately upstream above a nozzle at which value a flow-rate of a compressed air in consumption is lowest.	p. 12, ln. 25-p. 13, ln. 13; S7; S8; Fig. 7.
10. (currently amended) A method of selecting devices for an air blow system using a programmed computer, said method comprising	
a step in which an operator inputs the current values of ~~(1)~~ a nozzle diameter, ~~(2)~~ the number of nozzles, ~~(3)~~ a pressure immediately upstream above a nozzle, a blow impact pressure or a secondary pressure of a pressure-reducing valve, ~~(4)~~ a composite sonic conductance or a composite effective cross-sectional area~~.~~, ~~(5)~~ material of a pipe, and ~~(6)~~ a pipe length as current values through a current value inputting means;	p. 15, ln. 2-24; S15; Fig. 9.
a step in which an operator inputs a value of an upstream pressure loss or a conductance ratio as a set value providing a base for selecting ~~the~~ a recommended circuit through a means for inputting set values of the recommended circuit;	p. 15, ln. 25-p. 16, ln. 8; S16. inputs value of an upstream pressure loss: p. 16, lns. 1-2; S16.

	inputs conductance ratio: p. 16, lns. 2-8; S16.
a step in which the computer calculates a current upstream pressure loss and a current conductance ratio so that an operator judges whether or not the current upstream pressure loss or the current conductance ratio calculated by the computer meet the set value, and, in the event of a not-meet judgment, the computer calculates a sonic conductance of an electromagnetic valve of the recommended circuit and an inner diameter of a pipe of the recommended circuit which accord with the set value; and	p. 16, ln. 9-p. 22, ln. 24; Figs. 1, 4-6. calculates current upstream pressure loss: p. 17, lns. 10-16; p. 19, ln. 1; S17-10. calculates current conductance ratio: p. 16, ln. 28-p.17, ln. 2; S17-5; p. 18, ln. 25-p. 19, ln. 1; S17-20. calculates whether calculated values meet the set value: p. 19, lns. 5-14; S19. calculates sonic conductance of an electromagnetic valve: p. 20, ln. 1-p. 21, ln. 10; S23-3. calculates inner diameter of pipe: p. 20, ln. 1-p. 21, ln. 10; S23-3.
a step in which the result of the calculation by the computer is displayed on a screen of a personal computer for an operator to select devices for use in an upstream piping system and a pressure-reducing valve which accord with the calculated sonic conductance of an electromagnetic valve of the recommended circuit and with the calculated inner diameter of a pipe of the recommended circuit.	p. 22, ln. 25-p.23, ln. 4; Fig. 9; S27.
11. (currently amended) A method of selecting devices for an air blow system using a programmed computer, said method comprising	
a step in which an operator inputs new values of a nozzle diameter, the number of nozzles, a pressure immediately upstream above a nozzle or a blow impact pressure as new values through a new value inputting means;	p. 23, lns. 5-15; S21; Fig. 10.
a step in which an operator inputs a value of an upstream pressure loss or a conductance ratio as a set value providing a base for selecting ~~the~~ a recommended circuit through a means for inputting	p. 23, lns. 20-23; S22.

set values of the recommended circuit; and	
a step in which the computer calculates, from the new values and the set value, a sonic conductance of an electromagnetic valve of the recommended circuit and an inner diameter of a pipe of the recommended circuit which accord with the set value, for an operator to select devices for use in an upstream piping system and a pressure-reducing valve which accord with the calculated sonic conductance of an electromagnetic valve of the recommended circuit and with the calculated inner diameter of a pipe of the recommended circuit.	p. 23, lns. 23-26; Fig. 10; p. 20, ln. 1-p. 22, ln. 24. calculates sonic conductance of an electromagnetic valve: p. 20, ln. 1-p. 21, ln. 10; S23-3. calculates inner diameter of pipe: p. 20, ln. 1-p. 21, ln. 10; S23-3.
12. (currently amended) A computer readable medium which stores a program for selecting devices for an air blow system by a computer which is encoded with	**See Claim 9 above.**
a step in which an operator inputs current values of a nozzle diameter, a work distance, and a pressure immediately upstream above a nozzle or a blow impact pressure as current values through a current value inputting means;	
a step in which the computer calculates a flow-rate of a compressed air in consumption~~,~~ and at least one of a blow impact pressure or a pressure immediately upstream above a nozzle from the current values;	
a step in which an operator inputs an improved value of a nozzle diameter or a pressure immediately upstream above a nozzle so as to decrease the flow-rate of a compressed air in consumption through improved value inputting means;	
a step in which the computer calculates values of a flow-rate of a compressed air in consumption and either a pressure immediately upstream above a nozzle or a nozzle diameter from the current values and the improved value ~~necessary~~ one or more times; and	
a step in which the result of the calculation by the computer is displayed on a screen of a personal computer for an operator to select, from the calculation result, the value of a nozzle diameter or a pressure immediately upstream above a nozzle at which value a flow-rate of a compressed air in consumption is lowest.	
13. (currently amended) A computer readable medium which stores a program for selecting devices for an air blow system by a computer which is encoded with	**See Claim 10 above.**
a step in which an operator inputs current values of ~~(1)~~ a nozzle diameter, ~~(2)~~ the number of nozzles,	

~~(3)~~ a pressure immediately upstream above a nozzle, a blow impact pressure or a secondary pressure of a pressure-reducing valve, ~~(4)~~ a composite sonic conductance or a composite effective cross-sectional area, ~~(5)~~ material of a pipe, and ~~(6)~~ a pipe length as current values through a current value inputting means;	
a step in which an operator inputs a value of an upstream pressure loss or a conductance ratio as a set value providing a base for selecting ~~the~~ a recommended circuit through a means for inputting set values of the recommended circuit;	
a step in which the computer calculates a current upstream pressure loss and a current conductance ratio so that an operator judges whether or not the current upstream pressure loss or the current conductance ratio calculated by the computer meet the set value, and, in the event of a not-meet judgment, the computer calculates a sonic conductance of an electromagnetic valve of the recommended circuit and an inner diameter of a pipe of the recommended circuit which accord with the set value; and	
a step in which the result of the calculation by the computer is displayed on a screen of a personal computer for an operator to select devices for use in an upstream piping system and a pressure-reducing valve which accord with the calculated sonic conductance of an electromagnetic valve of the recommended circuit and with the calculated inner diameter of a pipe of the recommended circuit.	
14. (currently amended) A computer readable medium which stores a program for selecting devices for an air blow system by a computer which is encoded with	**See Claim 11 above.**
a step in which an operator inputs new values of a nozzle diameter, the number of nozzles, a pressure immediately upstream above a nozzle or a blow impact pressure as new values through a new value inputting means,	
a step in which an operator inputs a value of an upstream pressure loss or a conductance ratio as a set value providing a base for selecting ~~the~~ a recommended circuit through a means for inputting set values of the recommended circuit; and	
a step in which the computer calculates, from the new values and the set value, a sonic conductance of an electromagnetic valve of the recommended circuit and an inner diameter of a pipe of the recommended circuit which accord with the set value, for an operator to select devices for use in an upstream piping system and a pressure-reducing valve which accord with the, calculated sonic conductance of an electromagnetic valve of the recommended circuit and with the	

calculated inner diameter of a pipe of the recommended circuit.	

Accordingly, Applicants respectfully submit that the pending application is in compliance with § 112, first paragraph.

Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 9-14 under 35 U.S.C. § 103(a) as allegedly unpatentable over Kutz. The Examiner alleges that claims 9-14 consist of automating the manual process of solving equations known in the art. (Office Action, p. 8). Applicants respectfully submit that the claimed invention comprises a more nuanced process than simply solving known equations by machine and is therefore not obvious to one skilled in the relevant art.

The Examiner alleges that Kutz discloses formulas for determining flow rate for viscous fluid flow in ducts. On the other hand, the method disclosed in the pending application is used to determine the *optimum* consumption flow rate, which is quite different from merely determining a consumption flow rate given a set of parameters. Thus, the method of the pending application comprises more than merely inputting values for a nozzle diameter, a pressure immediately upstream of the nozzle, and a work distance into a formula and printing out a consumption flow rate. More specifically, the method of the pending application consists of additional steps in which the consumption flow rate corresponding to the present configuration of the device is iteratively compared against the consumption flow rates of different configurations of the device until an optimum consumption flow rate is achieved.

Applicants respectfully submit that, although this iterative process employs known formulas, the steps, as performed by operators and a computer system, and the sequencing

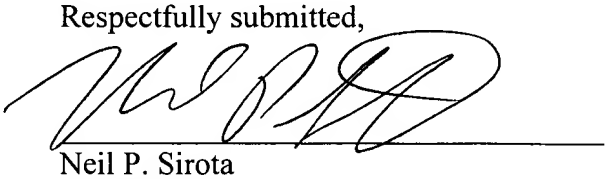
thereof are more complex than, and are non-obvious in view of the formulas employed. This conclusion finds support in the Examiner's own observations regarding the "complicated flow charts and specification" of the instant application. Office Action, p. 4. The claimed invention is not disclosed in Kutz, nor is it obvious simply because formulas for determining a flow rate exist. To summarize more generally, the invention is not, as the Examiner alleges, directed solely to automating the manual process for determining a flow rate based on a set of inputs. Rather, one aspect of the invention is directed to the further manipulation of the outputs of the flow rate formulas resulting in the determination of an optimum flow rate. This determination of an optimum flow rate is what makes this method non-obvious to one skilled in the art.

For at least these reasons, the pending application is not rendered obvious by Kutz.

CONCLUSION

In view of the foregoing remarks, favorable reconsideration and allowance of claims 9-14 are respectfully solicited. In the event that the application is not deemed in condition for allowance, the examiner is invited to contact the undersigned in an effort to advance the prosecution of this application.

Respectfully submitted,



Neil P. Sirota
Patent Office Reg. No. 38,306
(212) 408-2548

Attorney for Applicants

BAKER BOTTS L.L.P.
30 Rockefeller Plaza
New York, NY 10112